

Quasi-black holes: General features and purely field configurations

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Abstract

© 2015 World Scientific Publishing Company Objects that are on the threshold of forming the horizon but never collapse are called quasi-black holes (QBHs). We discuss the properties of the general spherically symmetric QBH metric without addressing its material source, including its limiting cases as the corresponding small parameter tends to zero. We then show that QBHs can exist among self-gravitating configurations of electromagnetic and dilatonic scalar fields without matter. These general results are illustrated by explicit examples of exact solutions.

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